

REMARKS

The present amendment is in response to the Office Action, dated October 4, 2002, where the Examiner has rejected claims 1-32 and objected to Figures 1 and 2. By the present amendment and response, the claims have been amended to overcome the Examiner's rejections and Figures 1 and 2 have been corrected to overcome the Examiner's objections. Accordingly, claims 1-32 are pending in the application. Reconsideration and allowance of pending claims 1-32 in view of the following remarks are respectfully requested.

A. Objection to Figures 1 and 2 under 37 CFR §1.84(g)

The Examiner has objected to Figures 1 and 2 under 37 CFR §1.84(g) due to informalities. Specifically, the Examiner objects to the top margins of Figures 1 and 2. To overcome the objection, applicants have attached corrected Figures 1 and 2 hereto. Figures 1 and 2 have been corrected to have top margins of 2.5 cm without adding new matter. Thus, applicant respectfully submits that corrected Figures 1 and 2 overcome the objection under 37 CFR §1.84(g).

B. Rejection of Claims 9-11 and 25-27 under 35 USC §112

The Examiner has rejected claims 9-11 and 25-27 under 35 USC §112, first paragraph, as containing subject matter which was not described in the specification in such as way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, the Examiner states that

there is not enough support for “first conductor is patterned from a layer of under bump metal” of claims 9 and 25 and “first conductor is between approximately 2.0 microns and approximately 5.0 microns thick” of claim 11 and 27. To overcome the rejection, applicant has amended claims 9, 11, 25 and 27 to correct a typographical error. Specifically, claims 9, 11, 25 and 27 have been amended to recite “said second conductor” instead of “said first conductor.” Applicant respectfully submits that the aforementioned amendments are fully supported by the specification. Accordingly, applicant respectfully submits that rejection of claims 9-11 and 25-27 has been traversed, and that claims 9-11 and 25-27 should now be allowed.

C. Rejection of Claims 1-32 under 35 USC §103(a)

The Examiner has rejected claims 1-4, 6-15, 17-20 and 22-31 under 35 USC §103(a) as being unpatentable over **Giri et al.** (USPN 6,261,467) (“**Giri ‘467’**”) in view of **Naya** (USPN 6,077,765) (“**Naya ‘765’**”). Applicant respectfully submits that the present invention, as defined by amended independent claims 1 and 17, from which claims 2-16 and 18-32 respectively depend, is patentably distinguishable over **Giri ‘467**, **Naya ‘765**, or any combination thereof.

The present invention, as defined by amended independent claim 1, teaches a structure that includes, “a first conductor; a first isolation layer situated over said first conductor; a second conductor situated over said first isolation layer, said second conductor comprising under bump metal, said second conductor having at least one external pad, wherein said second conductor is connected to said first conductor; a second

isolation layer situated over said second conductor.” By having a first conductor and a second conductor configured in this manner, the present invention results in an inductor having high quality factor, low resistivity and high inductance, which consumes little or no additional die space.

In contrast, **Giri ‘467** and **Naya ‘765** do not, singly or in combination, teach, disclose, or suggest a structure that includes, “a second conductor situated over said first isolation layer, said second conductor comprising under bump metal, said second conductor having at least one external pad, wherein said second conductor is connected to said first conductor; a second isolation layer situated over said second conductor.” **Giri ‘467** specifically discloses a structure including conductor pattern layer 102 (a first conductor), first dielectric layer 108 (a first isolation layer), wiring layer 110, passivation layer 112 (a second isolation layer) and joining pad layer 118 (a second conductor comprising under bump metal) (Figure 1A and column 2, lines 31-63). Joining pads 118 are situated within vias 124 and over, and in contact with, wiring layer 110 (Figure 1A and column 2, lines 54-57). Thus, in **Giri ‘467**, joining pads 118 (a second conductor comprising under bump metal) are not connected to conductor pattern layer 102 (a first conductor) and passivation layer 112 (a second isolation layer) is not situated over joining pad layer 118 (a second conductor comprising under bump metal). Therefore, **Giri ‘467** fails to teach, disclose, or suggest a structure having a second conductor connected to a first conductor or a second isolation layer situated over the second conductor in the manner taught by the present invention.

Naya '765 specifically discloses a structure including an under-bump metallurgy (UBM) layer 25 and bump electrode 31, which comprises core 28 and electric conduction strip 31a (Figure 4 and column 4, lines 39-42; column 4, lines 52-55; column 5, lines 21-28). The Examiner states that, “Naya discloses that the under bump is conventionally formed over the first isolation layer 23 and under the second dielectric 26 (See Fig. 2).” Applicant respectfully submits that the Examiner has misinterpreted the structure of **Naya '765** because the intermediate step of forming the structure of **Naya '765** includes “coating a photoresist on the entire surface of the UBM layer 25” and baking “to form a positive-type resist layer 26” (Figure 2 and column 4, lines 42-46). Further, **Naya '765** discloses, “[t]hereafter, as shown in FIG. 4, the resist layer 26 is removed” (Figure 4 and column 5, lines 14-15). Thus, resist layer 26 of **Naya '765** is not a dielectric layer nor is it included in the final structure. Therefore, **Naya '765** fails to teach, disclose, or suggest a structure having a second conductor connected to a first conductor or a second isolation layer situated over the second conductor in the manner taught by the present invention. As such, the present invention, as defined by amended independent claim 1, is patentably distinguishable over **Giri '467** and **Naya '765**, singly, or in combination thereof.

The Examiner has rejected independent claim 17 for reasons similar to claim 1. Applicant has amended independent claim 17 to recite limitations similar to those recited in amended claim 1. In particular, claim 17 has been amended to recite “fabricating a first conductor; forming a first isolation layer over said first conductor; fabricating a second conductor over said first isolation layer, said second conductor comprising under

bump metal, said second conductor having at least one external pad, wherein said second conductor is connected to said first conductor; forming a second isolation layer over said second conductor.” Thus, applicant respectfully submits that independent claim 17, having been amended to recite language similar that in claim 1, and its corresponding dependent claims 18-32, should be allowed for at least the same reasons stated in conjunction with claim 1.

The Examiner has further rejected claims 5 and 21 under 35 USC §103(a) as being unpatentable over **Giri ‘467** in view of **Naya ‘765**, as applied to claims 1-4, 6-15, 17-20 and 22-31, and further in view of **Utsumi et al.** (USPN 6,091,310) (“**Utsumi ‘310**”). As discussed above, the present invention, as defined by amended independent claims 1 and 17, is patentably distinguishable over **Giri ‘467** and **Naya ‘765**. **Utsumi ‘310** discloses a laminated multi-layer printed board with an inductor. **Utsumi ‘310** fails to teach, disclose, or suggest a structure having a second conductor connected to a first conductor or a second isolation layer situated over the second conductor in the manner taught by the present invention or method for fabricating such structure. As such, the present invention, as defined by amended independent claims 1 and 17, is patentably distinguishable over **Giri ‘467**, **Naya ‘765** and **Utsumi ‘310**, singly, or in combination thereof. Thus, claims 5 and 21, depending respectively from amended independent claims 1 and 17, are also patentable.

The Examiner has further rejected claims 16 and 32 under 35 USC §103(a) as being unpatentable over **Giri ‘467** in view of **Naya ‘765**, as applied to claims 1-4, 6-15,

17-20 and 22-31, and further in view of **Mourant** (USPN 5,886,589) (“**Mourant ‘589**”). As discussed above, the present invention, as defined by amended independent claims 1 and 17, is patentably distinguishable over **Giri ‘467** and **Naya ‘765**. **Mourant ‘589** discloses a printed circuit transformer. **Mourant ‘589** fails to teach, disclose, or suggest a structure having a second conductor connected to a first conductor or a second isolation layer situated over the second conductor in the manner taught by the present invention or method for fabricating such structure. As such, the present invention, as defined by amended independent claims 1 and 17, is patentably distinguishable over **Giri ‘467**, **Naya ‘765** and **Mourant ‘589**, singly, or in combination thereof. Thus, claims 16 and 32, depending respectively from amended independent claims 1 and 17, are also patentable.

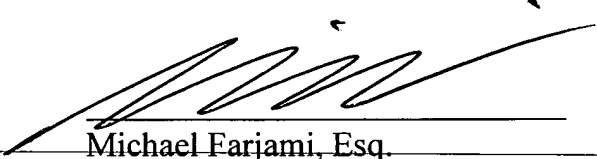
For the foregoing reasons, applicant respectfully submits that the present invention, as defined by independent claims 1 and 17, and claims depending therefrom, is not suggested, disclosed, or taught by **Giri ‘467**, **Naya ‘765**, **Utsumi ‘310** and **Mourant ‘589**, singly, or in combination thereof. As such, amended independent claims 1 and 17 and dependent claims 2-16 and 18-32 are patentably distinguishable over **Giri ‘467**, **Naya ‘765**, **Utsumi ‘310** and **Mourant ‘589**, singly, or in combination thereof.

D. Conclusion

Based on the foregoing reasons, the present invention, as defined by independent claims 1 and 17, and claims depending therefrom, is patentably distinguishable over the art cited by the Examiner. Thus, claims 1-32 pending in the present application are patentably distinguishable over the art cited by the Examiner. As such, and for all the foregoing reasons, an early allowance of claims 1-32 pending in the present application is respectfully requested.

Respectfully Submitted,
FARJAMI & FARJAMI LLP

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Michael Farjami, Esq.
Reg. No. 38, 135

Michael Farjami, Esq.
FARJAMI & FARJAMI LLP
16148 Sand Canyon
Irvine, California 92618
Telephone: (949) 784-4600
Facsimile: (949) 784-4601

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Version with Markings to Show Changes Made

In the Drawings:

Figures 1 and 2 have been replaced with amended Figures 1 and 2 attached hereto.

In the Claims:

Claims 1, 9, 11, 17, 25 and 27 have been amended as follows:

1. (Once Amended) A structure comprising:

a first conductor;

a first isolation layer situated over said first conductor;

a second conductor situated over said first isolation layer, said second conductor comprising under bump metal, said second conductor having at least one external pad, wherein said second conductor is connected to said first conductor;

a second isolation layer situated over said second conductor, said second isolation layer having at least one hole over said at least one external pad of said second conductor;

a bump attach site located at said at least one hole over said at least one external pad.

9. (Once Amended) The structure of claim 1 wherein said [first] second conductor is patterned from a layer of under bump metal.

11. (Once Amended) The structure of claim 10 wherein said [first] second conductor is between approximately 2.0 microns and approximately 5.0 microns thick.

17. (Once Amended) A method for realizing passives, said method comprising steps of:

fabricating a first conductor;

forming a first isolation layer over said first conductor;

fabricating a second conductor over said first isolation layer, said second

conductor comprising under bump metal, said second conductor having at least one external pad, wherein said second conductor is connected to said first conductor;

forming a second isolation layer over said second conductor, said second isolation layer having at least one hole over said at least one external pad of said second conductor;
fabricating a bump attach site at said at least one hole over said at least one external pad.

25. (Once Amended) The method of claim 17 wherein said [first] second conductor is patterned from a layer of under bump metal.

27. (Once Amended) The method of claim 26 wherein said [first] second conductor is between approximately 2.0 microns and approximately 5.0 microns thick.